

IN THE CLAIMS:

1. (Currently Amended) A recording/reproduction method, comprising the steps of:

generating a binary signal by converting a reproduction signal to a binary form;

generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;

measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and

changing a parameter of a recording pulse based on the edge shift amount,

wherein the reproduction signal is a signal obtained by reproducing ~~either a predetermined signal sequence or an arbitrary random signal sequence, and whether the predetermined signal sequence or the arbitrary random signal sequence is reproduced depends on~~ as a function of the edge shift amount,

wherein the step of measuring the edge shift amount comprises measuring a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measuring a leading edge shift amount between the leading edge time interval and the clock time interval, measuring a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measuring a trailing edge shift amount between the trailing edge time interval and the clock time interval, and

wherein the measuring step comprises measuring a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the step of changing the parameter of the recording pulse comprises changing a movement amount of the first pulse based on the leading edge shift amount, changing a movement amount of the cooling pulse based on the trailing edge shift amount, and changing a movement amount of the multipulse based on the jitter value.

2-10. (Canceled)

11. (Currently Amended) A recording/reproduction method ~~according to claim 7,~~ comprising the steps of:

generating a binary signal by converting a reproduction signal to a binary form;

generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;

measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and

changing a parameter of a recording pulse based on the edge shift amount,

wherein the reproduction signal is a signal obtained by reproducing an arbitrary random signal sequence, as a function of the edge shift amount,

wherein the step of measuring the edge shift amount comprises measuring a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measuring a leading edge shift amount between the leading edge time interval and the clock time interval, measuring a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measuring a trailing edge shift amount between the trailing edge time interval and the clock time interval, and

wherein the measuring step comprises measuring a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the step of changing the parameter of the recording pulse comprises changing a movement amount of the first pulse based on the leading edge shift amount, changing a movement amount of the multipulse based on the trailing edge shift amount, and changing a movement amount of the cooling pulse based on the jitter value.

12. (Currently Amended) A recording/reproduction method ~~according to claim 7, comprising the steps of:~~

generating a binary signal by converting a reproduction signal to a binary form;

generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;

measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and

changing a parameter of a recording pulse based on the edge shift amount,

wherein the reproduction signal is a signal obtained by reproducing an arbitrary random signal sequence, as a function of the edge shift amount,

wherein the step of measuring the edge shift amount comprises measuring a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measuring a leading edge shift amount between the leading edge time interval and the clock time interval, measuring a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measuring a trailing edge shift amount between the trailing edge time interval and the clock time interval, and

wherein[-] the measuring step comprises measuring a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the step of changing the parameter of the recording pulse comprises changing a movement amount of the first pulse based on the leading edge shift amount, changing a power of the multipulse based on the trailing edge shift amount, and changing a movement amount of the cooling pulse based on the jitter value.

13. (Currently Amended) A recording/reproduction apparatus, comprising:
- a binary signal generating section for generating a binary signal by converting a reproduction signal to a binary form;
 - a synchronization signal generating section for generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;
 - an edge shift measuring section for measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and
 - a pulse changing section for changing a parameter of a recording pulse based on the edge shift amount,
- wherein the reproduction signal is a signal obtained by reproducing ~~either a predetermined signal sequence or an arbitrary random signal sequence, and whether the predetermined signal sequence or the arbitrary random signal sequence is reproduced depends on~~ as a function of the edge shift amount,
- wherein the edge shift measuring section measures a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measures a leading edge shift amount between the leading edge time interval and the clock time interval, measures a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measures a trailing edge shift amount between the trailing edge time interval and the clock time interval, and
- wherein the edge shift measuring section measures a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the pulse changing section changes a movement amount of the first pulse based on the leading edge shift amount, changes a movement amount of the cooling pulse based on the trailing edge shift amount, and changes a movement amount of the multipulse based on the jitter value.

- 14-22. (Canceled)

23. (Currently Amended) A recording/reproduction apparatus according to claim 19, comprising:

a binary signal generating section for generating a binary signal by converting a reproduction signal to a binary form;

a synchronization signal generating section for generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;

an edge shift measuring section for measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and

a pulse changing section for changing a parameter of a recording pulse based on the edge shift amount,

wherein the reproduction signal is a signal obtained by reproducing an arbitrary random signal sequence, as a function of the edge shift amount,

wherein the edge shift measuring section measures a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measures a leading edge shift amount between the leading edge time interval and the clock time interval, measures a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measures a trailing edge shift amount between the trailing edge time interval and the clock time interval, and

wherein the edge shift measuring section measures a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the pulse changing section changes a movement amount of the first pulse based on the leading edge shift amount, changes a movement amount of the multipulse based on the trailing edge shift amount, and changes a movement amount of the cooling pulse based on the jitter value.

24. (Currently Amended) A recording/reproduction apparatus according to claim 19, comprising:

a binary signal generating section for generating a binary signal by converting a reproduction signal to a binary form;

a synchronization signal generating section for generating a synchronization signal using the binary signal, the synchronization signal being in synchronization with a clock signal;

an edge shift measuring section for measuring a time interval between the binary signal and the synchronization signal and measuring an edge shift amount between the time interval and a clock time interval specified by the clock signal; and

a pulse changing section for changing a parameter of a recording pulse based on the edge shift amount,

wherein the reproduction signal is a signal obtained by reproducing an arbitrary random signal sequence, as a function of the edge shift amount,

wherein the edge shift measuring section measures a leading edge time interval between a mark leading edge of the binary signal and a mark trailing edge of the synchronization signal, measures a leading edge shift amount between the leading edge time interval and the clock time interval, measures a trailing edge time interval between a mark trailing edge of the binary signal and a mark leading edge of the synchronization signal, and measures a trailing edge shift amount between the trailing edge time interval and the clock time interval, and

wherein the edge shift measuring section measures a jitter value; the recording pulse contains a first pulse, a multipulse, and a cooling pulse; and the pulse changing section changes a movement amount of the first pulse based on the leading edge shift amount, changes a power of the multipulse based on the trailing edge shift amount, and changes a movement amount of the cooling pulse based on the jitter value.